



NEB-207-US.ST25.txt  
SEQUENCE LISTING

<110> Morgan, Richard D.  
Bhatia, Tanya  
Davis, Theodore  
Lovasco, Lindsay

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 Met Leu Ile Val Pro Ala Thr Ser Ser Gln Arg Arg Glu Tyr Leu Pro  
 195 200 205  
 Ile Gly Tyr Val Ser Glu Lys Asn Ile Val Ser Tyr Ser Leu Met Leu  
 210 215 220  
 Ile Pro Asn Ala Ser Asn Phe Asn Phe Gly Ile Leu Glu Ser Lys Val  
 225 230 235 240  
 His Tyr Ile Trp Leu Lys Asn Phe Cys Gly Arg Leu Lys Ser Asp Tyr  
 245 250 255  
 Arg Tyr Ser Asn Thr Ile Ile Tyr Asn Asn Phe Pro Trp Pro Thr Val  
 260 265 270  
 Gly Asp Lys Gln Glu Gln Asn Ile Ser Glu Thr Ala Gln Gly Ile Leu  
 275 280 285  
 Asn Thr Arg Lys Leu Tyr Pro Asp Ser Ser Leu Ala Asp Leu Tyr Asp  
 290 295 300  
 Pro Leu Thr Met Pro Val Glu Leu Arg Lys Ala His Glu Ala Asn Asp  
 305 310 315 320  
 Lys Ala Val Leu Lys Ala Tyr Gly Leu Ser Pro Lys Ala Thr Glu Gln  
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 Glu Ile Val Glu His Leu Phe Lys Met Tyr Glu Lys Leu Thr Lys Gly  
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 Glu Arg

NEB-207-US.ST25.txt

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Lys Arg Trp Glu Asp Ala Ser Asp Glu Asn Ser Gln Ala Lys Pro Phe  
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Leu Ile Asp Phe Phe Glu Val Phe Gly Ile Thr Asn Lys Arg Val Ala  
 35 40 45

Thr Phe Glu His Ala Val Lys Lys Phe Ala Lys Ala His Lys Glu Gln  
 50 55 60

Ser Arg Gly Phe Val Asp Leu Phe Trp Pro Gly Ile Leu Leu Ile Glu  
 65 70 75 80

Met Lys Ser Arg Gly Lys Asp Leu Asp Lys Ala Tyr Asp Gln Ala Leu  
 85 90 95

Asp Tyr Phe Ser Gly Ile Ala Glu Arg Asp Leu Pro Arg Tyr Val Leu  
 100 105 110

Val Cys Asp Phe Gln Arg Phe Arg Leu Thr Asp Leu Ile Thr Lys Glu  
 115 120 125

Ser Val Glu Phe Leu Leu Lys Asp Leu Tyr Gln Asn Val Arg Ser Phe  
 130 135 140

Gly Phe Ile Ala Gly Tyr Gln Thr Gln Val Ile Lys Pro Gln Asp Pro  
 145 150 155 160

Ile Asn Ile Lys Ala Ala Glu Arg Met Gly Lys Leu His Asp Thr Leu  
 165 170 175

Lys Leu Val Gly Tyr Glu Gly His Ala Leu Glu Leu Tyr Leu Val Arg  
 180 185 190

Leu Leu Phe Cys Leu Phe Ala Glu Asp Thr Thr Ile Phe Glu Lys Ser  
 195 200 205

NEB-207-US.ST25.txt

Leu Phe Gln Glu Tyr Ile Glu Thr Lys Thr Leu Glu Asp Gly Ser Asp  
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 Leu Ala His His Ile Asn Thr Leu Phe Tyr Val Leu Asn Thr Pro Glu  
 225 230 235 240  
 Gln Lys Arg Leu Lys Asn Leu Asp Glu His Leu Ala Ala Phe Pro Tyr  
 245 250 255  
 Ile Asn Gly Lys Leu Phe Glu Glu Pro Leu Pro Pro Ala Gln Phe Asp  
 260 265 270  
 Lys Ala Met Arg Glu Ala Leu Leu Asp Leu Cys Ser Leu Asp Trp Ser  
 275 280 285  
 Arg Ile Ser Pro Ala Ile Phe Gly Ser Leu Phe Gln Ser Ile Met Asp  
 290 295 300  
 Ala Lys Lys Arg Arg Asn Leu Gly Ala His Tyr Thr Ser Glu Ala Asn  
 305 310 315 320  
 Ile Leu Lys Leu Ile Lys Pro Leu Phe Leu Asp Glu Leu Trp Val Glu  
 325 330 335  
 Phe Glu Lys Val Lys Asn Asn Lys Asn Lys Leu Leu Ala Phe His Lys  
 340 345 350  
 Lys Leu Arg Gly Leu Thr Phe Phe Asp Pro Ala Cys Gly Cys Gly Asn  
 355 360 365  
 Phe Leu Val Ile Thr Tyr Arg Glu Leu Arg Leu Leu Glu Ile Glu Val  
 370 375 380  
 Leu Arg Gly Leu His Arg Gly Gly Gln Gln Val Leu Asp Ile Glu His  
 385 390 395 400  
 Leu Ile Gln Ile Asn Val Asp Gln Phe Phe Gly Ile Glu Ile Glu Glu  
 405 410 415  
 Phe Pro Ala Gln Ile Ala Gln Val Ala Leu Trp Leu Thr Asp His Gln  
 420 425 430  
 Met Asn Met Lys Ile Ser Asp Glu Phe Gly Asn Tyr Phe Ala Arg Ile  
 435 440 445  
 Pro Leu Lys Ser Thr Pro His Ile Leu Asn Ala Asn Ala Leu Gln Ile  
 450 455 460

NEB-207-US.ST25.txt

Asp Trp Asn Asp Val Leu Glu Ala Lys Lys Cys Cys Phe Ile Leu Gly  
 465 470 475 480  
 Asn Pro Pro Phe Val Gly Lys Ser Lys Gln Thr Pro Gly Gln Lys Ala  
 485 490 495  
 Asp Leu Leu Ser Val Phe Gly Asn Leu Lys Ser Ala Ser Asp Leu Asp  
 500 505 510  
 Leu Val Ala Ala Trp Tyr Pro Lys Ala Ala His Tyr Ile Gln Thr Asn  
 515 520 525  
 Ala Asn Ile Arg Cys Ala Phe Val Ser Thr Asn Ser Ile Thr Gln Gly  
 530 535 540  
 Glu Gln Val Ser Leu Leu Trp Pro Leu Leu Leu Ser Leu Gly Ile Lys  
 545 550 555 560  
 Ile Asn Phe Ala His Arg Thr Phe Ser Trp Thr Asn Glu Ala Ser Gly  
 565 570 575  
 Val Ala Ala Val His Cys Val Ile Ile Gly Phe Gly Leu Lys Asp Ser  
 580 585 590  
 Asp Glu Lys Ile Ile Tyr Glu Tyr Glu Ser Ile Asn Gly Glu Pro Leu  
 595 600 605  
 Ala Ile Lys Ala Lys Asn Ile Asn Pro Tyr Leu Arg Asp Gly Val Asp  
 610 615 620  
 Val Ile Ala Cys Lys Arg Gln Gln Pro Ile Ser Lys Leu Pro Ser Met  
 625 630 635 640  
 Arg Tyr Gly Asn Lys Pro Thr Asp Asp Gly Asn Phe Leu Phe Thr Asp  
 645 650 655  
 Glu Glu Lys Asn Gln Phe Ile Thr Asn Glu Pro Ser Ser Glu Lys Tyr  
 660 665 670  
 Phe Arg Arg Phe Val Gly Gly Asp Glu Phe Ile Asn Asn Thr Ser Arg  
 675 680 685  
 Trp Cys Leu Trp Leu Asp Gly Ala Asp Ile Ser Glu Ile Arg Ala Met  
 690 695 700  
 Pro Leu Val Leu Ala Arg Ile Lys Lys Val Gln Glu Phe Arg Leu Lys



705                      710                      715                      720  
 Ser Ser Ala Lys Pro Thr Arg Gln Ser Ala Ser Thr Pro Met Lys Phe  
                                  725                      730                      735  
 Phe Tyr Ile Ser Gln Pro Asp Thr Asp Tyr Leu Leu Ile Pro Glu Thr  
                                  740                      745                      750  
 Ser Ser Glu Asn Arg Gln Phe Ile Pro Ile Gly Phe Val Asp Arg Asn  
                                  755                      760                      765  
 Val Ile Ser Ser Asn Ala Thr Tyr His Ile Pro Ser Ala Glu Pro Leu  
                                  770                      775                      780  
 Ile Phe Gly Leu Leu Ser Ser Thr Met His Asn Cys Trp Met Arg Asn  
                                  785                      790                      795                      800  
 Val Gly Gly Arg Leu Glu Ser Arg Tyr Arg Tyr Ser Ala Ser Leu Val  
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 Tyr Asn Thr Phe Pro Trp Ile Gln Pro Asn Glu Lys Gln Ser Lys Ala  
                                  820                      825                      830  
 Ile Glu Glu Ala Ala Phe Ala Ile Leu Lys Ala Arg Ser Asn Tyr Pro  
                                  835                      840                      845  
 Asn Glu Ser Leu Ala Gly Leu Tyr Asp Pro Lys Thr Met Pro Ser Glu  
                                  850                      855                      860  
 Leu Leu Lys Ala His Gln Lys Leu Asp Lys Ala Val Asp Ser Val Tyr  
                                  865                      870                      875                      880  
 Gly Phe Lys Gly Pro Asn Thr Glu Ile Ala Arg Ile Ala Phe Leu Phe  
                                  885                      890                      895  
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&lt;223&gt; GenBank No. gi|15794682|ref|NP\_284504.1

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Tyr Tyr Lys Asp Gln Thr Asp Glu Arg Arg Glu Lys Asp Thr Phe Asn  
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Glu Phe Phe Ala Ile Phe Gly Ile Asp Arg Lys Asn Val Ala His Phe  
 35 40 45

Glu Tyr Pro Val Lys Asp Pro Ala Asp Asn Thr Gln Phe Val Asp Ile  
 50 55 60

Phe Trp Glu Gly Ile Phe Leu Ala Glu His Lys Ser Ala Asn Lys Asn  
 65 70 75 80

Leu Thr Lys Ala Lys Glu Gln Ala Glu Arg Tyr Leu Gln Glu Ile Gly  
 85 90 95

Arg Thr Lys Pro Ser Ala Leu Pro Glu Tyr Tyr Ala Val Ser Asp Phe  
 100 105 110

Ala His Phe His Leu Tyr Arg Arg Val Pro Glu Glu Gly Ala Glu Asn  
 115 120 125

Gln Trp Gln Phe Pro Leu Glu Glu Leu Pro Glu Tyr Ile Thr Arg Gly  
 130 135 140

Val Phe Asp Phe Met Phe Gly Ile Glu Ala Lys Val Arg Gln Ile Gln  
 145 150 155 160

Glu Glu Ala Asn Ile Gln Ala Ala Ala Thr Ile Gly Arg Leu His Asp  
 165 170 175

Ala Leu Lys Glu Glu Gly Ile Tyr Glu Glu His Glu Leu Arg Leu Phe  
 180 185 190

Ile Thr Arg Leu Leu Phe Leu Phe Phe Ala Asp Asp Ser Ala Val Phe  
 195 200 205

Arg Arg Asn Tyr Leu Phe Gln Asp Phe Leu Glu Asn Cys Lys Glu Ala  
 210 215 220

Asp Thr Leu Gly Asp Lys Leu Asn Gln Leu Phe Glu Phe Leu Asn Thr  
 225 230 235 240

Pro Asp Gln Lys Arg Ser Lys Thr Gln Ser Glu Lys Phe Lys Gly Phe  
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Glu Tyr Val Asn Gly Gly Leu Phe Lys Glu Arg Leu Arg Thr Phe Asp  
260 265 270

Phe Thr Ala Lys Gln His Arg Ala Leu Ile Asp Cys Gly Asn Phe Asp  
275 280 285

Trp Arg Asn Ile Ser Pro Glu Ile Phe Gly Thr Leu Phe Gln Ser Val  
290 295 300

Met Asp Ala Gln Glu Arg Arg Glu Ala Gly Ala His Tyr Thr Glu Ala  
305 310 315 320

Ala Asn Ile Asp Lys Val Ile Asn Gly Leu Phe Leu Glu Asn Leu Arg  
325 330 335

Ala Glu Phe Glu Ala Val Lys Ala Leu Lys Arg Asp Lys Ala Lys Lys  
340 345 350

Leu Ala Ala Phe Tyr Gln Lys Ile Gln Asn Leu Gln Phe Leu Asp Pro  
355 360 365

Ala Cys Gly Cys Gly Asn Phe Leu Ile Val Ala Tyr Asp Arg Ile Arg  
370 375 380

Ala Leu Glu Asp Asp Ile Ile Ala Glu Ala Leu Lys Asp Lys Ala Asp  
385 390 395 400

Gly Leu Phe Asp Ser Pro Ser Val Gln Cys Arg Leu Lys Gln Phe His  
405 410 415

Gly Ile Glu Ile Asp Glu Phe Ala Val Leu Ile Ala Arg Thr Ala Met  
420 425 430

Trp Leu Lys Asn His Gln Cys Asn Ile Arg Thr Gln Ile Arg Phe Asp  
435 440 445

Gly Glu Val Ala Cys His Thr Leu Pro Leu Glu Asp Ala Ala Glu Ile  
450 455 460

Ile His Ala Asn Ser Leu Arg Thr Pro Trp Gln Ala Ala Asp Tyr Ile  
465 470 475 480

Phe Gly Asn Pro Pro Phe Ile Gly Ser Thr Tyr Gln Thr Lys Glu Gln  
485 490 495

NEB-207-US.ST25.txt

Lys Asn Asp Leu Glu Ser Ile Cys Gly His Ile Lys Gly Tyr Gly Leu  
500 505 510

Leu Asp Tyr Val Cys Asn Trp Tyr Val Lys Ala Ala Gly Ile Met Ala  
515 520 525

Gln His Pro Gln Val Gln Thr Ala Phe Val Ser Thr Asn Ser Ile Cys  
530 535 540

Gln Gly Gln Gln Val Glu Ile Leu Trp Gly Ser Leu Leu Asn Gln Gly  
545 550 555 560

Ile Glu Ile His Phe Ala His Arg Thr Phe Gln Trp Thr Ser Gln Ala  
565 570 575

Ala Gly Lys Ala Ala Val His Cys Ile Ile Val Gly Phe Arg Gln Lys  
580 585 590

Pro Pro Met Pro Ser Glu Lys Thr Leu Tyr Asp Tyr Pro Asp Ile Lys  
595 600 605

Gly Glu Pro Glu Lys His Ala Val Ala Asn Ile Asn Pro Tyr Leu Ile  
610 615 620

Asp Ala Pro Asp Leu Ile Ile Ala Lys Arg Ser Arg Pro Ile His Cys  
625 630 635 640

Glu Pro Asp Met Val Asn Gly Ser Lys Pro Thr Glu Gly Gly Asn Leu  
645 650 655

Ile Leu Ser Thr Ala Glu Lys Asp Ala Leu Ile Ala Ala Glu Pro Leu  
660 665 670

Ala Glu Gln Tyr Ile Arg Pro Phe Ile Gly Ala Asp Glu Phe Leu Asn  
675 680 685

Gly Lys Thr Arg Trp Cys Leu Trp Phe His Gly Val Ser Asp Val Lys  
690 695 700

Arg Asn His Asp Leu Lys Gln Met Pro Gln Val Gln Ala Arg Ile Gln  
705 710 715 720

Ala Val Lys Thr Met Arg Glu Ala Ser Ser Asp Lys Gln Thr Gln Lys  
725 730 735

Asp Ala Ala Thr Pro Trp Leu Phe Gln Lys Ile Arg Gln Pro Ser Asp  
740 745 750

NEB-207-US.ST25.txt

Gly Asn Tyr Leu Ile Ile Pro Ser Val Ser Ser Glu Ser Arg Arg Phe  
755 760 765

Ile Pro Ile Gly Tyr Leu Ser Phe Glu Thr Val Val Ser Asn Leu Ala  
770 775 780

Phe Ile Leu Pro Asn Ala Thr Leu Tyr His Phe Gly Ile Leu Ser Ser  
785 790 795 800

Thr Met His Asn Ala Phe Met Arg Thr Val Ala Gly Arg Leu Lys Ser  
805 810 815

Asp Tyr Arg Tyr Ser Asn Thr Val Val Tyr Asn Asn Phe Pro Phe Pro  
820 825 830

Glu Ser Cys Arg Leu Pro Ser Glu Asn Asp Arg Pro Asp Pro Leu Arg  
835 840 845

Ala Ala Val Glu Ala Ala Ala Gln Thr Val Leu Asp Ala Arg Gly Gln  
850 855 860

Tyr Arg Arg Glu Ala Gln Glu Ala Gly Leu Pro Glu Pro Thr Leu Ala  
865 870 875 880

Glu Leu Tyr Ala Pro Asp Ala Gly Tyr Thr Ala Leu Asp Lys Ala His  
885 890 895

Ala Thr Leu Asp Lys Ala Val Asp Lys Ala Tyr Gly Tyr Lys Thr Gly  
900 905 910

Lys Asn Thr Asp Asp Glu Ala Glu Arg Val Ala Phe Leu Phe Glu Leu  
915 920 925

Tyr Arg Lys Ala Ala Ala Ile Ala  
930 935

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NEB-207-US.ST25.txt

Glu Asp His Ser Asp Phe Leu Tyr Glu Leu Leu Gly Val Tyr Asp Val  
20 25 30

Pro Arg Ala Thr Ile Thr Arg Leu Lys Lys Gly Asn Gln Asn Leu Thr  
35 40 45

Lys Arg Val Gly Glu Val His Leu Lys Asn Lys Val Trp Phe Lys Glu  
50 55 60

Ala Lys Lys Gly Lys Leu Phe Asp Ala Leu Ile Asp Ile Glu Gln Gln  
65 70 75 80

Val Glu Tyr Leu Ser Ala Lys Pro Arg Tyr Leu Leu Val Thr Asp Tyr  
85 90 95

Asp Gly Val Leu Ala Lys Asp Thr Lys Thr Leu Glu Ala Leu Asp Val  
100 105 110

Lys Phe Glu Glu Leu Pro Gln Tyr Phe Asp Phe Phe Leu Ala Trp Lys  
115 120 125

Gly Ile Glu Lys Val Glu Phe Glu Lys Glu Asn Pro Ala Asp Ile Lys  
130 135 140

Ala Ala Glu Arg Phe Ala Arg Ile Tyr Asp Val Leu Arg Lys Glu Asn  
145 150 155 160

Asn Ile Ile Glu Thr Asn Arg Gly Leu Asp Leu Phe Leu Ile Arg Leu  
165 170 175

Leu Phe Cys Phe Phe Ala Glu Asp Thr Asp Ile Phe Lys Arg Asn Ser  
180 185 190

Phe Thr Asn Leu Ile Lys Thr Leu Thr Glu Glu Asp Gly Ser Asn Leu  
195 200 205

Asn Lys Leu Phe Ala Asp Leu Phe Ile Val Leu Asp Lys Asn Glu Arg  
210 215 220

Asp Asp Val Pro Ser Tyr Leu Lys Glu Phe Pro Tyr Val Asn Gly Gln  
225 230 235 240

Leu Phe Thr Glu Pro His Thr Glu Leu Glu Phe Ser Ala Lys Ser Arg  
245 250 255

Lys Leu Ile Ile Glu Cys Gly Glu Leu Leu Asn Trp Ala Lys Ile Asn  
260 265 270

NEB-207-US.ST25.txt

Pro Asp Ile Phe Gly Ser Met Ile Gln Ala Val Ala Ser Glu Glu Ser  
275 280 285

Arg Ser Tyr Leu Gly Met His Tyr Thr Ser Val Pro Asn Ile Met Lys  
290 295 300

Val Ile Lys Pro Leu Phe Leu Asp Lys Leu Asn Gln Ser Phe Leu Asp  
305 310 315 320

Ala Tyr Asp Asp Tyr Thr Lys Leu Glu Asn Leu Leu Thr Arg Ile Gly  
325 330 335

Lys Ile Lys Phe Phe Asp Pro Ala Cys Gly Ser Gly Asn Phe Leu Ile  
340 345 350

Ile Thr Tyr Lys Glu Leu Arg Arg Met Glu Ile Asn Ile Ile Lys Arg  
355 360 365

Leu Gln Glu Leu Leu Gly Glu Tyr Leu Tyr Val Pro Ser Val Thr Leu  
370 375 380

Ser Gln Phe Tyr Gly Ile Glu Ile Glu Asp Phe Ala His Asp Val Ala  
385 390 395 400

Lys Leu Ser Leu Trp Ile Ala Glu His Gln Met Asn Glu Glu Leu Lys  
405 410 415

Asn Glu Val His Asn Ala Val Arg Pro Thr Leu Pro Leu His Thr Ala  
420 425 430

Gly Asp Ile Arg Cys Ala Asn Ala Ile Arg Val Glu Trp Thr Glu Val  
435 440 445

Cys Pro Ala Gln Gly Ser Glu Glu Val Tyr Val Phe Gly Asn Pro Pro  
450 455 460

Tyr Leu Gly Ser Lys Lys Gln Asn Lys Glu His Lys Ser Asp Met Leu  
465 470 475 480

Ser Ile Phe Gly Lys Val Lys Asn Gly Lys Met Leu Asp Tyr Ile Ser  
485 490 495

Ala Trp Phe Tyr Phe Gly Ala Lys Tyr Ala Ser Thr Thr Asn Ala Lys  
500 505 510

Val Ala Phe Val Ser Thr Asn Ser Val Thr Gln Gly Glu Gln Val Ser  
515 520 525

NEB-207-US.ST25.txt

Ile Leu Trp Asn Glu Leu Phe Lys Phe Gly Ile Gln Ile Asn Phe Ala  
530 535 540

Tyr Lys Ser Phe Lys Trp Ala Asn Asn Ala Lys Asn Asn Ala Ala Val  
545 550 555 560

Ile Val Val Ile Val Gly Phe Gly Pro Leu Asp Thr Lys Val Asn Lys  
565 570 575

Tyr Leu Phe Val Asp Glu Thr Lys Lys Leu Val Ser Asn Ile Ser Pro  
580 585 590

Tyr Leu Thr Asp Gly Glu Asn Ile Leu Val Ser Ser Arg Thr Lys Pro  
595 600 605

Ile Ser Asp Leu Pro Lys Leu His Phe Gly Asn Met Pro Asn Asp Gly  
610 615 620

Gly Gly Leu Leu Phe Thr Ile Thr Glu Tyr Thr Asp Ala Ile Asn Lys  
625 630 635 640

Tyr Pro Glu Leu Val Pro Tyr Phe Lys Lys Phe Ile Gly Ser Val Glu  
645 650 655

Phe Ile Asn Gly Gly Leu Arg Tyr Cys Leu Trp Leu Asn Glu Ala Lys  
660 665 670

Tyr Glu Lys Ile Lys Ser Asn Pro Leu Ile Gln Glu Arg Ile Ser Ile  
675 680 685

Ser Lys Asn His Arg Glu Lys Ser Thr Asp Lys Gly Thr Asn Lys Leu  
690 695 700

Ala Leu Thr Pro Trp Lys Phe Arg Asp Thr His Glu Thr Thr Asn Tyr  
705 710 715 720

Ser Ile Val Val Pro Ser Val Ser Ser Glu Asn Arg Phe Tyr Ile Pro  
725 730 735

Met Gly Leu Ala Gly Ala Asp Thr Ile Leu Ser Asn Leu Ile Tyr Val  
740 745 750

Ile Tyr Asp Ala Glu Ile Tyr Leu Leu Gly Ile Leu Met Ser Arg Met  
755 760 765

His Met Thr Trp Val Lys Ala Val Ala Gly Arg Leu Lys Thr Asp Tyr



770

775

Arg Tyr Ser Ala Gly Leu Cys Tyr Asn Thr Phe Pro Ile Pro Glu Leu  
785 790 795 800

Ser Thr Arg Arg Lys Asn Glu Ile Glu Glu Ala Ile Leu Glu Ile Leu  
805 810 815

Asp Leu Arg Glu Glu Gln Gly Gly Thr Leu Ala Glu Leu Tyr Asn Pro  
820 825 830

Ser Thr Met Pro Ile Glu Leu Lys Val Ala His Glu Lys Leu Asp Gly  
835 840 845

Ile Val Glu Arg Ala Tyr Arg Gln Lys Gln Phe Glu Ser Asp Glu Glu  
850 855 860

Arg Leu Glu Val Leu Leu Lys Leu Tyr Gln Glu Met Thr Glu Arg  
865 870 875

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20 25 30

Glu Ala Glu Asn Arg Pro Ala Thr Glu Ser Ser His Asp Gln Gln Phe  
35 40 45

Trp Gly Asp Leu Leu Asp Cys Phe Gly Val Asn Ala Arg Asp Leu Tyr  
50 55 60

Leu Tyr Gln Arg Ser Ala Lys Arg Ala Ser Thr Gly Arg Thr Gly Lys  
65 70 75 80

Ile Asp Met Phe Met Pro Gly Lys Val Ile Gly Glu Ala Lys Ser Leu  
85 90 95

Gly Val Pro Leu Asp Asp Ala Tyr Ala Gln Ala Leu Asp Tyr Leu Leu  
100 105 110

NEB-207-US.ST25.txt

Gly Gly Thr Ile Ala Asn Ser His Met Pro Ala Tyr Val Val Cys Ser  
115 120 125

Asn Phe Glu Thr Leu Arg Val Thr Arg Leu Asn Arg Thr Tyr Val Gly  
130 135 140

Asp Ser Ala Asp Trp Asp Ile Thr Phe Pro Leu Ala Glu Ile Asp Glu  
145 150 155 160

His Ile Glu Gln Leu Ala Phe Leu Ala Asp Tyr Glu Thr Ser Ala Tyr  
165 170 175

Arg Glu Glu Glu Lys Ala Ser Leu Glu Ala Ser Arg Leu Met Val Glu  
180 185 190

Leu Phe Arg Ala Met Asn Gly Asp Asp Val Asp Glu Ala Val Gly Asp  
195 200 205

Asp Ala Pro Thr Thr Pro Glu Glu Glu Asp Glu Arg Val Met Arg Thr  
210 215 220

Ser Ile Tyr Leu Thr Arg Ile Leu Phe Leu Leu Phe Gly Asp Asp Ala  
225 230 235 240

Gly Leu Trp Asp Thr Pro His Leu Phe Ala Asp Phe Val Arg Asn Glu  
245 250 255

Thr Thr Pro Glu Ser Leu Gly Pro Gln Leu Asn Glu Leu Phe Ser Val  
260 265 270

Leu Asn Thr Ala Pro Glu Lys Arg Pro Lys Arg Leu Pro Ser Thr Leu  
275 280 285

Ala Lys Phe Pro Tyr Val Asn Gly Ala Leu Phe Ala Glu Pro Leu Ala  
290 295 300

Ser Glu Tyr Phe Asp Tyr Gln Met Arg Glu Ala Leu Leu Ala Ala Cys  
305 310 315 320

Asp Phe Asp Trp Ser Thr Ile Asp Val Ser Val Phe Gly Ser Leu Phe  
325 330 335

Gln Leu Val Lys Ser Lys Glu Ala Arg Arg Ser Asp Gly Glu His Tyr  
340 345 350

Thr Ser Lys Ala Asn Ile Met Lys Thr Ile Gly Pro Leu Phe Leu Asp  
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355

360

365

Glu Leu Arg Ala Glu Ala Asp Lys Leu Val Ser Ser Pro Ser Thr Ser  
 370 375 380  
 Val Ala Ala Leu Glu Arg Phe Arg Asp Ser Leu Ser Glu Leu Val Phe  
 385 390 395 400  
 Ala Asp Met Ala Cys Gly Ser Gly Asn Phe Leu Leu Leu Ala Tyr Arg  
 405 410 415  
 Glu Leu Arg Arg Ile Glu Thr Asp Ile Ile Val Ala Ile Arg Gln Arg  
 420 425 430  
 Arg Gly Glu Thr Gly Met Ser Leu Asn Ile Glu Trp Glu Gln Lys Leu  
 435 440 445  
 Ser Ile Gly Gln Phe Tyr Gly Ile Glu Leu Asn Trp Trp Pro Ala Lys  
 450 455 460  
 Ile Ala Glu Thr Ala Met Phe Leu Val Asp His Gln Ala Asn Lys Glu  
 465 470 475 480  
 Leu Ala Asn Ala Val Gly Arg Pro Pro Glu Arg Leu Pro Ile Lys Ile  
 485 490 495  
 Thr Ala His Ile Val His Gly Asn Ala Leu Gln Leu Asp Trp Ala Asp  
 500 505 510  
 Ile Leu Ser Ala Ser Ala Ala Lys Thr Tyr Ile Phe Gly Asn Pro Pro  
 515 520 525  
 Phe Leu Gly His Ala Thr Arg Thr Ala Glu Gln Ala Gln Glu Leu Arg  
 530 535 540  
 Asp Leu Trp Gly Thr Lys Asp Ile Ser Arg Leu Asp Tyr Val Thr Gly  
 545 550 555 560  
 Trp His Ala Lys Cys Leu Asp Phe Phe Lys Ser Arg Glu Gly Arg Phe  
 565 570 575  
 Ala Phe Val Thr Thr Asn Ser Ile Thr Gln Gly Asp Gln Val Pro Arg  
 580 585 590  
 Leu Phe Gly Pro Ile Phe Lys Ala Gly Trp Arg Ile Arg Phe Ala His  
 595 600 605

Arg Thr Phe Ala Trp Asp Ser Glu Ala Pro Gly Lys Ala Ala Val His  
 610 615 620  
 Cys Val Ile Val Gly Phe Asp Lys Glu Ser Gln Pro Arg Pro Arg Leu  
 625 630 635 640  
 Trp Asp Tyr Pro Asp Val Lys Gly Glu Pro Val Ser Val Glu Val Gly  
 645 650 655  
 Gln Ser Ile Asn Ala Tyr Leu Val Asp Gly Pro Asn Val Leu Val Asp  
 660 665 670  
 Lys Ser Arg His Pro Ile Ser Ser Glu Ile Ser Pro Ala Thr Phe Gly  
 675 680 685  
 Asn Met Ala Arg Asp Gly Gly Asn Leu Leu Val Glu Val Asp Glu Tyr  
 690 695 700  
 Asp Glu Val Met Ser Asp Pro Val Ala Ala Lys Tyr Val Arg Pro Phe  
 705 710 715 720  
 Arg Gly Ser Arg Glu Leu Met Asn Gly Leu Asp Arg Trp Cys Leu Trp  
 725 730 735  
 Leu Val Asp Val Ala Pro Ser Asp Ile Ala Gln Ser Pro Val Leu Lys  
 740 745 750  
 Lys Arg Leu Glu Ala Val Lys Ser Phe Arg Ala Asp Ser Lys Ala Ala  
 755 760 765  
 Ser Thr Arg Lys Met Ala Glu Thr Pro His Leu Phe Gly Gln Arg Ser  
 770 775 780  
 Gln Pro Asp Thr Asp Tyr Leu Cys Leu Pro Lys Val Val Ser Glu Arg  
 785 790 795 800  
 Arg Ser Tyr Phe Thr Val Gln Arg Tyr Pro Ser Asn Val Ile Ala Ser  
 805 810 815  
 Asp Leu Val Phe His Ala Gln Asp Pro Asp Gly Leu Met Phe Ala Leu  
 820 825 830  
 Ala Ser Ser Ser Met Phe Ile Thr Trp Gln Lys Ser Ile Gly Gly Arg  
 835 840 845  
 Leu Lys Ser Asp Leu Arg Phe Ala Asn Thr Leu Thr Trp Asn Thr Phe  
 850 855 860

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Pro Val Pro Glu Leu Asp Glu Lys Thr Arg Gln Arg Ile Ile Lys Ala  
865 870 875 880

Gly Lys Lys Val Leu Asp Ala Arg Ala Leu His Pro Glu Arg Ser Leu  
885 890 895

Ala Glu His Tyr Asn Pro Leu Ala Met Ala Pro Glu Leu Ile Lys Ala  
900 905 910

His Asp Ala Leu Asp Arg Glu Val Asp Lys Ala Phe Gly Ala Pro Arg  
915 920 925

Lys Leu Thr Thr Val Arg Gln Arg Gln Glu Leu Leu Phe Ala Asn Tyr  
930 935 940

Glu Lys Leu Ile Ser His Gln Pro  
945 950

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Gly Asn Val Asp Val Val Lys Phe Leu Lys Arg Val Tyr Gly Ala Ser  
35 40 45

Glu Tyr Ile Arg Gly Glu Val Arg Phe Cys Leu Trp Ile Ser Asp Ser  
50 55 60

Gln Glu Gln Glu Ala Lys Ser Asn Ser Asp Ile Asn Cys Lys Leu Asn  
65 70 75 80

Ala Val Ala Ala Phe Arg Leu Lys Ser Pro Lys Ala Ala Thr Lys Lys  
85 90 95

Gly Ala Ala Trp Pro His Lys Phe Glu Glu Val Lys Gln Ile Gly Asn  
100 105 110

Glu Val Val Thr Ile Val Pro Lys Val Ser Ser Glu Ser Arg Glu Tyr  
 115 120 125

Leu Pro Val Gly Leu Leu Pro Arg Gly Ser Ile Val Thr Asp Leu Ala  
 130 135 140

Phe Ala Leu Tyr Asp Ala Pro Leu Trp Asn Met Ala Leu Ile Ala Ser  
 145 150 155 160

Arg Leu His Leu Val Trp Ile Gly  
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Pro Tyr Asp Ala Ser Glu Phe Pro Phe Gln Phe Leu Ala Ala Phe Gly  
 20 25 30

Asn Lys Gln Thr Thr Leu Gln Arg Leu Arg Ala Gly Asn Ser Asn Gln  
 35 40 45

Ser Asp Leu Pro Gly Ala Val Leu Gln Arg Asn His Ile His Ile Ala  
 50 55 60

Thr Cys Asp Ala Gly Asn Val Asp Arg Thr Leu Ala Ala Leu Arg Lys  
 65 70 75 80

Ser Pro Lys Thr Ala Ser Gln Lys Ala Arg Phe Ile Leu Ala Thr Asp  
 85 90 95

Gly Val Ala Phe Gln Ala Glu Asp Met Ala Ser Gly Glu Thr Val Ala  
 100 105 110

Cys Asn Tyr Ala Ala Phe Pro Asp Lys Phe Ala Phe Phe Leu Pro Leu  
 115 120 125

Ala Gly Ile Thr Thr Val Gln Gln Ile Arg Glu Ser Ser Phe Asp Ile  
 130 135 140

Lys Ala Thr Gly Arg Leu Asn Lys Leu Tyr Val Glu Leu Leu Lys Asp  
 Page 30

145                      150                      155                      160  
 Asn Pro Asp Trp Ala Ser Arg Ser Glu Asp Met Asn His Phe Met Ala  
                                  165                                   170                                   175  
 Arg Leu Ile Phe Cys Phe Phe Ala Glu Asp Thr Asp Ile Phe Val Gly  
                                  180                                   185                                   190  
 Glu Gly Leu Phe Ser Arg Thr Val Glu Thr Met Ser Ala Arg Asp Ala  
                                  195                                   200                                   205  
 Ser Asp Thr His Met Val Ile Ala Glu Ile Phe Arg Ala Met Asp Thr  
                                  210                                   215                                   220  
 Arg Leu Ala Asp Arg Ala Ala Ala Gly Ile Lys Ser Trp Ala Asp Val  
                                  225                                   230                                   235                                   240  
 Phe Pro Tyr Val Asn Gly Gln Leu Phe Ser Gly Ser Thr Glu Cys Pro  
                                  245                                   250                                   255  
 Arg Phe Ser Lys Ile Ala Arg Ser Tyr Leu Leu His Ile Gly Ser Leu  
                                  260                                   265                                   270  
 Asp Trp Gln Lys Ile Asn Pro Asp Ile Phe Gly Ser Met Ile Gln Ala  
                                  275                                   280                                   285  
 Val Ala Asp Asp Glu Glu Arg Gly Ala Leu Gly Met His Tyr Thr Ser  
                                  290                                   295                                   300  
 Val Pro Asn Ile Leu Lys Val Leu Asn Pro Leu Phe Leu Asp Asp Leu  
                                  305                                   310                                   315                                   320  
 Arg Ala Lys Leu Glu Glu Ala Gly Asp Asn Ser Arg Lys Leu Leu Asn  
                                  325                                   330                                   335  
 Leu Arg Asn Arg Met Ala Lys Ile Arg Val Phe Asp Pro Ala Cys Gly  
                                  340                                   345                                   350  
 Ser Gly Asn Phe Leu Val Ile Ala Tyr Lys Gln Met Arg Glu Leu Glu  
                                  355                                   360                                   365  
 Ala Glu Ile Asn Arg Arg Arg Gly Glu Ala Asp Arg Arg Ser Asp Ile  
                                  370                                   375                                   380  
 Pro Leu Thr Asn Phe Arg Gly Ile Glu Leu Arg Asn Phe Pro Ala Glu  
                                  385                                   390                                   395                                   400

Ile Ala Arg Leu Ala Leu Ile Ile Ala Glu Tyr Gln Cys Asp Val Leu  
 405 410 415  
 Tyr Arg Gly Gln Lys Glu Ala Leu Ala Glu Phe Leu Pro Leu Asp Ser  
 420 425 430  
 Gln Asn Trp Ile Thr Cys Gly Asn Ala Leu Arg Leu Asp Trp Leu Ser  
 435 440 445  
 Ile Cys Pro Pro Thr Gly Thr Ala Val Lys Leu Gln Ala Asn Asp Leu  
 450 455 460  
 Phe Glu Met Pro Leu Asp Gln Ala Glu Ile Asp Phe Glu Asn Glu Gly  
 465 470 475 480  
 Gly Glu Thr Tyr Ile Cys Gly Asn Pro Pro Tyr Leu Gly Ala Lys Lys  
 485 490 495  
 Lys Ser Ser Asp Gln Ile Glu Asp Met Lys Arg Val Gly Leu Asp Lys  
 500 505 510  
 Ala Gln Leu Leu Asp Tyr Val Ser Ala Phe Ile Val Arg Gly Leu Pro  
 515 520 525  
 Leu Val Ala Gln Gln Arg Cys Asp Met Ala Leu Val Ser Thr Ser Ser  
 530 535 540  
 Ile Cys Gln Gly Glu Gln Val Ser Leu Ile Trp Pro Arg Ile Leu Lys  
 545 550 555 560  
 Ser Ala Asn Val Lys Phe Ala Tyr Arg Pro Phe Arg Trp Ser Asn Ser  
 565 570 575  
 Ala Ala Asn Asn Ala Gly Val Tyr Cys Thr Ile Ile Gly Leu Thr Gly  
 580 585 590  
 Ser Glu Val Ser Asn Lys Lys Leu Phe Gly Glu Gly Ser Val Val Glu  
 595 600 605  
 Cys Ser Ser Ile Ala Pro Tyr Leu Val Pro Gly Pro Glu Ile Ile Cys  
 610 615 620  
 Ala Pro Arg Gln Ser Ser Ile Ser Gly Phe Ala Arg Met Val Met Gly  
 625 630 635 640  
 Ser Asn Pro Val Asp Gly Lys Arg Leu Ile Phe Glu Gln Asp Glu Lys  
 645 650 655



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Glu Ser Val Val Ala Ala Asp Pro Arg Ser Glu Arg Phe Phe Lys Arg  
 660 665 670  
 Tyr Gly Gly Thr Gln Glu Leu Val Asn Gly Val Asp Arg Trp Cys Leu  
 675 680 685  
 Trp Ile Asn Asp Asp Gln Val Asp Asp Ala Lys Ala Ile Ala Glu Ile  
 690 695 700  
 Ala Lys Val Leu Glu Ser Cys Arg Ser Tyr Arg Gln Gly Ala Gly Arg  
 705 710 715 720  
 Asp Ala Gln Lys Ala Ala Asn Arg Pro His Ser Phe Cys Tyr Arg Thr  
 725 730 735  
 Phe Gln Glu Asn Ile Gly Ile His Val Gly Leu Thr Ile Gly Asn Gly  
 740 745 750  
 Leu Ser His Val Pro Ala Asp Leu Lys Ser Ser Gly Phe Val Ser Ser  
 755 760 765  
 His Thr Ala Tyr Met Ile Tyr Gly Trp His Pro Val Glu Phe Ala Leu  
 770 775 780  
 Leu Asn Ser Arg Leu Met Leu Val Trp Thr Glu Thr Val Gly Gly Arg  
 785 790 795 800  
 Leu Gly Asn Gly Met Arg Phe Ser Asn Thr Ile Val Tyr Asn Thr Phe  
 805 810 815  
 Pro Val Pro Ser Leu Thr Asp Gln Asn Lys Ala Asp Leu Thr Arg Cys  
 820 825 830  
 Ala Glu Asp Ile Leu Leu Ala Arg Glu Ser His Phe Pro Ala Thr Ile  
 835 840 845  
 Ala Asp Leu Tyr Asp Pro Glu Thr Met Pro Glu Ser Leu Arg Ala Ala  
 850 855 860  
 His Asp Arg Asn Asp Glu Val Leu Glu Arg Ile Tyr Ile Gly Arg Arg  
 865 870 875 880  
 Phe Arg Asn Asp Thr Glu Arg Leu Glu Lys Leu Phe Glu Leu Tyr Thr  
 885 890 895  
 Lys Met Thr Gly Gly Arg Ser Ser Glu Gly Gly Ala Ala  
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NEB-207-US.ST25.txt

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 20 25 30

Glu His Phe Leu Asp Ile Cys Ser Leu Val Gly His Pro Ser Pro Ser  
 35 40 45

Asp Glu Asp Pro Thr Gly Ala Phe Phe Ala Phe Glu Lys Gly Ala Asn  
 50 55 60

Lys Leu Gly Gly Gly Lys Gly Phe Ala Asp Val Trp Lys Lys Gly His  
 65 70 75 80

Phe Ala Trp Glu Tyr Lys Arg Lys Lys Gly Asn Leu Asp Glu Ala Leu  
 85 90 95

Leu Gln Leu Met Arg Tyr Ala Pro Ala Leu Leu Ser Pro Pro Leu His  
 100 105 110

Ile Val Cys Asp Ile Glu Arg Leu Arg Ile His Thr Ala Trp Thr Asn  
 115 120 125

Thr Val Pro Ser Thr Tyr Val Ile Thr Leu Asp Asp Leu Ala Glu Pro  
 130 135 140

Ser Ala Arg Glu Met Leu His Asn Val Phe Phe Ser Pro Glu Lys Leu  
 145 150 155 160

Arg Pro Thr Arg Thr Arg Ala Ala Val Thr Lys Glu Ala Ala Asp Lys  
 165 170 175

Phe Ser Ala Ile Ala Leu Arg Val Gln Gly Arg Gly Thr Pro Asp Glu  
 180 185 190

Ile Ala His Phe Val Asn Gln Leu Val Phe Cys Phe Phe Ala Gln Ser  
 195 200 205

## NEB-207-US.ST25.txt

Val Ser Leu Leu Pro Asp Gly Leu Phe Thr Lys Leu Leu Lys Arg Ser  
 210 215 220  
 Ala Arg Ala Pro Glu Arg Ala Met Ser Tyr Leu Asp Lys Leu Phe Glu  
 225 230 235 240  
 Ala Met Glu Arg Gly Gly Glu Phe Asp Leu Thr Asp Ile Thr Trp Phe  
 245 250 255  
 Asn Gly Gly Leu Phe Asp Gly Arg Arg Ala Leu Arg Leu Asp Asp Gly  
 260 265 270  
 Asp Ile Gly Leu Leu Val Ala Ala Asp Ser Leu Asp Trp Gly Leu Ile  
 275 280 285  
 Asp Pro Thr Ile Phe Gly Thr Leu Phe Glu Arg Phe Leu Asp Pro Glu  
 290 295 300  
 Lys Arg Ala Gln Ile Gly Ala His Tyr Thr Asp Pro Glu Lys Ile Met  
 305 310 315 320  
 Arg Leu Val Asp Pro Val Ile Leu Arg Pro Leu Arg Gln Glu Trp Glu  
 325 330 335  
 Gln Ala Arg Arg Glu Ile Val Glu Leu Leu Asn Gly Asn Arg Lys Pro  
 340 345 350  
 Pro Met Arg Arg Gln Gln Ser Arg Arg Met Lys Arg Glu Glu Ala Ala  
 355 360 365  
 Ala Glu Val Arg Ser Arg Phe Thr Glu Arg Leu Arg Lys Leu Arg Ile  
 370 375 380  
 Leu Asp Pro Ala Cys Gly Ser Gly Asn Phe Leu Tyr Leu Ala Leu Gln  
 385 390 395 400  
 Gly Val Lys Asp Ile Glu His Arg Ala Asn Leu Asp Cys Glu Met Leu  
 405 410 415  
 Gly Met Pro Ala Gln Leu Pro Leu Val Gly Pro Glu Ile Leu Arg Gly  
 420 425 430  
 Ile Glu Ile Asn Met Met Ala Ala Glu Leu Ala Arg Thr Thr Ile Trp  
 435 440 445  
 Ile Gly Asp Ile Gln Trp Gln Ile Lys Asn Gly Ile Arg Ser Lys Ser  
 450 455 460

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Ile Pro Ile Leu Arg Lys Leu Asp Ala Ile Glu Arg Arg Asp Ala Leu  
465 470 475 480

Val Arg Gln Ala Gln Asp Val Asp Thr Ala Arg Asp Ala Gln Gly Asp  
485 490 495

Leu Leu Ala Ala Leu Gln Pro Val Ser Glu Asp Ala Glu Ala Glu Trp  
500 505 510

Pro Glu Ala Glu Phe Ile Val Gly Asn Pro Pro Phe Val Gly Val Arg  
515 520 525

Leu Met Arg Gln Ala Leu Gly Asp Pro Thr Val Asp Arg Leu Phe Asp  
530 535 540

Val Tyr Asp Gly Arg Val Ser Arg Glu Ala Asp Leu Val Cys Tyr Trp  
545 550 555 560

Val Glu Lys Ser Arg Ala Ala Val Ala Ala Asp Arg Thr Arg Arg Val  
565 570 575

Gly Leu Val Thr Thr Asn Ser Ile Arg Gly Gly Ala Asn Arg Arg Val  
580 585 590

Leu Asp Arg Ile Ile Ala Glu Ser Arg Leu Phe Glu Ala Trp Ser Asp  
595 600 605

Glu Pro Trp Val Val Asp Gly Ala Ala Val Arg Val Ser Leu Ile Cys  
610 615 620

Phe Gly His Gly Glu Asp Pro Leu Cys Leu Asp Gly Arg Thr Val Ala  
625 630 635 640

Gln Ile Asn Ala Asp Leu Thr Ala Gly Val Thr Asp Leu Thr Lys Ala  
645 650 655

Arg Arg Leu Ser Glu Asn Gln Asn Val Ala Phe Met Gly Asp Thr Lys  
660 665 670

Gly Gly Ala Phe Asp Val Pro Gly Ser Leu Ala Arg Ala Trp Leu Ser  
675 680 685

Met Pro Met Asn Pro Asn Gly Arg Pro Asn Ser Asp Val Leu Arg Pro  
690 695 700

Trp Arg Asn Gly Met Asp Val Ala Arg Arg Gly Arg Asp Met Trp Ile  
Page 36

705 710 715 720  
 Val Asp Phe Gly Trp Glu Met Ser Glu Gln Glu Ala Ala Leu Tyr Glu  
 725 730 735  
 Ala Pro Phe Gln His Ile Arg Glu His Val Phe Pro Glu Arg Ser Lys  
 740 745 750  
 Asn Arg Arg Asp Ala Tyr Arg Glu Arg Trp Trp Arg His Val Glu Pro  
 755 760 765  
 Arg Pro Ala Phe His Ala Ser Leu Gln Gly His Ser Arg Tyr Met Ala  
 770 775 780  
 Thr Pro Arg Val Ala Lys His Arg Thr Phe Val Trp Leu Asp Gln Ala  
 785 790 795 800  
 Ile Val Pro Asp Ser Arg Ile Phe Ala Phe Ser Arg Ser Asp Asp Val  
 805 810 815  
 Phe Phe Gly Ile Leu His Ser Arg Phe His Glu Ala Trp Ser Phe Gly  
 820 825 830  
 Thr Cys Ser Trp His Gly Val Gly Asn Asp Pro Thr Tyr Asn Ser Ala  
 835 840 845  
 Gly Val Phe Glu Thr Phe Pro Phe Pro Glu Gly Leu Thr Pro Asp Ile  
 850 855 860  
 Pro Ala Val Arg Tyr Glu Lys Asp Ser Arg Ala Ile Ala Ile Ser Lys  
 865 870 875 880  
 Ala Ala Lys Arg Leu Asp Asp Ile Arg Asn Ala Trp Leu Asn Pro Ser  
 885 890 895  
 Asp Leu Val Gln Ile Lys Pro Glu Val Val Pro Gly Tyr Pro Asp Arg  
 900 905 910  
 Ile Leu Pro Lys Asp Ile Ala Ser Asp Ala Ile Leu Arg Asp Arg Thr  
 915 920 925  
 Leu Thr Asn Leu Tyr Asn Arg Arg Pro Gln Trp Leu Val Asp Ala His  
 930 935 940  
 Ser Asp Leu Asp Ala Ala Val Ala Gly Ala Tyr Gly Trp Pro Ala Asp  
 945 950 955 960

NEB-207-US.ST25.txt

Ile Ser Glu Asp Glu Ala Leu Ala Asn Leu Leu Glu Leu Asn Leu Ala  
965 970 975

Arg Glu Ala Phe Asn Glu His Ala Lys Ser Gly Leu Lys Thr Arg Lys  
980 985 990

Pro Arg Arg Arg Pro Thr Pro Glu Glu Val Arg Arg Ala Pro Gln Met  
995 1000 1005

Lys Leu Pro Ile Ala Gly Gly Arg Lys Ser Val Val Gly Pro Gln  
1010 1015 1020

Gln Leu Thr Thr Lys Asp Arg Glu Asn Gln Pro Thr Ser Ala Glu  
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Arg Pro Arg Asn Thr Lys Arg Arg Thr Ser  
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Leu Gly Glu Arg Tyr Cys Phe Glu Arg Gly Ala Ala Lys Thr Gly Gly  
20 25 30

Gly Asp Gly Trp Ala Asp Val Trp Arg Lys Gly Cys Phe Gly Trp Glu  
35 40 45

Tyr Lys Gly Lys His Lys Asn Leu Asp Ala Ala Leu Arg Gln Leu Gln  
50 55 60

Ala Tyr Ala Leu Asp Leu Gln Asn Pro Pro Tyr Leu Val Val Ser Asp  
65 70 75 80

Met Glu Arg Ile Ile Val His Thr Asn Trp Thr Asn Thr Ile Ser Arg  
85 90 95

Lys Ile Glu Phe Thr Leu Asp Asp Leu His Glu Pro Glu Lys Leu Ala  
100 105 110

Met Leu Arg Gln Val Phe Asp Gly Ser Asp Ser Leu Lys Pro Lys Ile  
Page 38

115

120

125

Ser Pro Gln Glu Leu Thr Ala Lys Val Ala Gln Arg Phe Gly Asp Leu  
 130 135 140  
 Gly Arg Arg Leu Gln Glu Arg Gly His His Pro Arg Asp Val Ala His  
 145 150 155 160  
 Phe Leu Asn Arg Val Val Phe Cys Met Phe Ala Glu Asp Ala Lys Leu  
 165 170 175  
 Leu Pro Glu Gly Leu Phe Thr Arg Leu Thr Arg Ser Met Gln Met Arg  
 180 185 190  
 Pro Pro Ala Glu Ala Ala Pro Gln Phe Asp Ala Leu Phe Ala Met Met  
 195 200 205  
 Arg Ala Gly Gly Met Phe Gly Ala Asp Ile Val His Trp Phe Asn Gly  
 210 215 220  
 Gly Leu Phe Asp Glu Lys Pro Ala Leu Pro Leu Glu Arg Ala Asp Ile  
 225 230 235 240  
 Lys Leu Ile His Asp Thr Ala Ala Glu His Asp Trp Ser Asp Leu Asp  
 245 250 255  
 Pro Ser Val Phe Gly Asn Met Phe Glu Glu Ala Leu Lys Ala Thr Arg  
 260 265 270  
 Glu Arg Ala Ala Leu Gly Ala His Tyr Thr Asp Arg Glu Lys Ile Leu  
 275 280 285  
 Lys Ile Ile Asp Pro Val Ile Thr Trp Pro Leu Met Ala Gln Trp Glu  
 290 295 300  
 Thr Ala Leu Ala Glu Ile Arg Ala Ala Leu Asp Ala Arg Ala Ala Ala  
 305 310 315 320  
 Glu Ala Glu Arg Lys Ala Val Leu Glu Ala Ala Ala Glu Ala Met Arg  
 325 330 335  
 Ala Asp Pro Val Lys Ala Lys Ala Gly Glu Ala Ala Arg Arg Lys Thr  
 340 345 350  
 Leu Thr Ala Ile Ala Lys Arg Ser Asp Ala Ala Leu Gly Gln Ala Lys  
 355 360 365

NEB-207-US.ST25.txt

Asp Arg Leu Glu Ala Phe Leu Ser Arg Leu Ala Ala Phe Arg Val Leu  
 370 375 380  
 Asp Pro Ala Cys Gly Ser Gly Asn Phe Leu Tyr Val Ala Leu His Ala  
 385 390 395 400  
 Leu Lys Asp Ile Glu Arg Arg Ala Leu Val Asp Ala Glu Arg Leu Gly  
 405 410 415  
 Leu Glu Val Pro Thr Pro Arg Val Gly Leu Ala Cys Val Arg Gly Ile  
 420 425 430  
 Glu Ile Glu Glu Tyr Ala Ala Glu Leu Ala Arg Val Thr Leu Trp Ile  
 435 440 445  
 Gly Asp Leu Gln Trp His Ala Lys Asn Asn Tyr Arg Gly Phe Ala Glu  
 450 455 460  
 Pro Ile Leu Ser Ser Leu Asp Gln Ile Glu Cys Arg Asp Ala Leu Leu  
 465 470 475 480  
 Asn Ala Asp Gly Thr Glu Ala Gln Trp Pro Ala Val Asp Val Ile Val  
 485 490 495  
 Gly Asn Pro Pro Phe Leu Gly Ser Lys Arg Leu Arg Asp Gly Leu Gly  
 500 505 510  
 Asn Asp Tyr Val Glu Arg Leu Phe Ser Thr Tyr Arg Gly Lys Val Pro  
 515 520 525  
 Ala Glu Ala Asp Phe Val Ala Tyr Trp Ile Ala Lys Ala Trp Glu Leu  
 530 535 540  
 Val Gln Ala Gln Gln Gly Arg Arg Ala Gly Leu Val Thr Thr Asn Ser  
 545 550 555 560  
 Val Arg Gly Gly Ala Ser Arg Lys Val Leu Asp Pro Ile Ala Asp Ala  
 565 570 575  
 Gly Ala Leu Met Glu Ala Trp Ala Asp Glu Pro Trp Ala Leu Glu Gly  
 580 585 590  
 Ala Ala Val Arg Val Ser Met Phe Gly Phe Gly Asp Gly Phe Ala Glu  
 595 600 605  
 Arg Arg Leu Glu Gly Arg Lys Ala Glu His Leu His Ser Asp Phe Arg  
 610 615 620



NEB-207-US.ST25.txt

Gly Ala Ser Thr Asp Val Thr Lys Ala Leu Arg Leu Lys Glu Asn Ala  
625 630 635 640

Ser Ile Ala Phe Met Gly Asp Thr Lys Gly Gly Ala Phe Asp Val Ser  
645 650 655

Gly Glu Ile Ala Arg Glu Trp Leu Arg Leu Pro Leu Asn Pro Asn Gly  
660 665 670

Arg Pro Asn Ser Asp Val Leu Lys Pro Trp Arg Asn Ala Met Asp Met  
675 680 685

Thr Arg Arg Ser Ser Asp Lys Trp Ile Ile Asp Phe Gly Trp Thr Met  
690 695 700

Ser Glu Ala Asp Ala Ala Leu Phe Glu Thr Pro Phe Arg His Val Leu  
705 710 715 720

Leu His Val Lys Pro Glu Arg Asp Arg Asn Asn Arg Glu Met Tyr Arg  
725 730 735

Leu Asn Trp Trp Lys His Val Glu Pro Arg Gln Gly Leu Met Lys Arg  
740 745 750

Val Pro Ala Leu Ser Arg Leu Leu Val Thr Pro Glu Val Ser Lys His  
755 760 765

Arg Leu Phe Ile Trp Leu Asp Ala Arg Val Leu Pro Asp His Lys Leu  
770 775 780

Gln Val Val Thr Leu Asp Asp Asp Cys Ser Phe Gly Val Leu His Ser  
785 790 795 800

Arg Phe His Glu Val Trp Ala Leu Ala Ala Gly Ser Trp His Gly Ser  
805 810 815

Gly Asn Asp Pro Arg Tyr Thr Ile Ser Thr Thr Phe Glu Thr Phe Pro  
820 825 830

Phe Pro Glu Gly Leu Thr Pro Asn Ile Ala Ala Val Asp Tyr Glu Gly  
835 840 845

Asp Pro Arg Ala Gln Ala Ile Ala Ala Ala Ala Glu Leu Asn Arg  
850 855 860

Leu Arg Glu Ala Trp Leu Asn Pro Pro Asp Leu Val Arg Ile Glu Pro  
865 870 875 880

NEB-207-US.ST25.txt

Glu Val Val Pro Gly Tyr Pro Asp Arg Val Leu Pro Val Ser Pro Glu  
885 890 895

Ala Gly Ala Glu Leu Lys Lys Arg Thr Leu Thr Asn Leu Tyr Asn Gln  
900 905 910

Arg Pro Ala Trp Leu Asp Met Ala His Gln Arg Leu Asp Ala Ala Val  
915 920 925

Ala Ala Ala Tyr Gly Trp Pro Asp Gly Leu Thr Asp Asp Glu Ile Leu  
930 935 940

Glu Arg Leu Phe Ala Leu Asn Gln Glu Arg Ala Ala Ala Gly Arg  
945 950 955

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Met His Pro Gln Glu Phe Ala Asp Thr Trp Ser Arg Arg Ala Leu Lys  
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Ala Thr Glu Arg Asp Ser Tyr Val Gln His Trp Leu Asp Leu Cys Gln  
20 25 30

Leu Leu His His Glu Ala Pro Gly Ala Asp Pro Asp Tyr Lys Phe Glu  
35 40 45

Arg Arg Val Thr Lys Val Gly Thr Lys Asp Lys Gly Phe Ala Asp Val  
50 55 60

Phe Lys Lys Ala His Phe Ile Thr Glu Tyr Lys Arg Pro Gly Ser Asp  
65 70 75 80

Leu Gly Ala Ala Leu Gln Gln Ala Thr Leu Tyr Ser Arg Asp Leu Gly  
85 90 95

Asn Pro Pro Leu Leu Leu Thr Ser Asp Phe Gln Arg Ile Glu Ile Asn  
100 105 110

Thr Ala Phe Thr Gly Thr Ser Pro Lys Ser Tyr Leu Ile Thr Leu Asp  
115 120 125

NEB-207-US.ST25.txt

Asp Ile Ala Glu Asn Arg Val Val Gly Gly Asn Asp Val Pro Ala Leu  
 130 135 140  
 Gln Ile Leu His Ser Ala Leu His Gln Pro Tyr Asp Leu Asp Pro Arg  
 145 150 155 160  
 Leu Phe Arg Glu Arg Ile Thr Thr Asp Ala Thr Arg Gln Val Gly Leu  
 165 170 175  
 Val Ala Arg Arg Leu Gly Glu Arg Glu Gly Arg Thr Arg Ala Ala His  
 180 185 190  
 Met Met Met Arg Val Val Phe Ala Leu Phe Ala Glu Asp Thr Gly Met  
 195 200 205  
 Leu Glu Arg Gly Ile Val Thr Arg Leu Leu Glu Arg Ala Arg Ala Pro  
 210 215 220  
 Pro Gly Glu Asp Gln Leu Tyr Phe Gln Asp Leu Phe Gly Ala Met Lys  
 225 230 235 240  
 Gly Gly Gly Glu Phe Trp Gly Thr Asp Ile Arg His Phe Asn Gly Gly  
 245 250 255  
 Leu Phe Asp Ser Glu Asp Ala Leu Ala Leu Thr Ser Glu Asp Ala Ala  
 260 265 270  
 Ala Leu Ile Ile Ala Ala Lys Leu Asp Trp Ser Glu Val Glu Pro Ser  
 275 280 285  
 Ile Phe Gly Thr Leu Phe Glu Asn Ser Leu Asp Val Asp Thr Arg Ser  
 290 295 300  
 Arg Arg Gly Ala His Tyr Thr Ser Val Asn Asp Ile Glu Arg Ile Val  
 305 310 315 320  
 Asp Arg Val Val Met Glu Pro Leu Trp Ala Glu Trp Asp Ala Leu Arg  
 325 330 335  
 Leu Ser Leu Pro Glu Leu Lys Lys Asn Val Arg Leu Glu Arg Leu Phe  
 340 345 350  
 Ala Phe Gln Asp Arg Leu Thr Ala Val Arg Ile Leu Asp Pro Ala Cys  
 355 360 365  
 Gly Ser Gly Asn Phe Leu Phe Val Ala Leu Lys Lys Leu Leu Asp Leu  
 370 375 380

NEB-207-US.ST25.txt

Glu Tyr Gln Val Arg Met Ala Ala Val Met Asn Asp Ile Gly Glu Phe  
385 390 395 400

Glu Met Pro Pro Leu Val His Pro Gln Gln Met Leu Gly Ile Glu Ile  
405 410 415

Glu Thr Phe Ala His Glu Leu Ala Ser Ile Thr Leu Trp Met Gly Tyr  
420 425 430

Phe Gln Trp Lys Arg Ala His Gly Gly His Trp Glu Thr Pro Ile Leu  
435 440 445

Gln Arg Leu Asp Asn Ile Gln Asn Arg Asp Ala Leu Leu Asn Pro Asp  
450 455 460

Gly Thr Glu Ala Thr Trp Pro Arg Ala Asp Phe Ile Val Gly Asn Pro  
465 470 475 480

Pro Phe Leu Gly Asp Lys Met Met Arg Ser Gln Leu Gly Glu Ala Tyr  
485 490 495

Thr Thr Gln Leu Arg Glu Thr Phe Lys Asp Arg Leu Pro Gly Gln Ser  
500 505 510

Asp Leu Val Cys Tyr Trp Pro Glu Lys Ala Arg Ala Leu Ile Glu Ala  
515 520 525

Gly Val Thr Thr Arg Ala Gly Phe Val Thr Thr Asn Ser Ile Arg Gly  
530 535 540

Gly Lys Asn Arg Val Val Leu Glu Arg Ile Lys Ala Thr Gly Asp Leu  
545 550 555 560

Phe Met Ala Trp Pro Asp Glu Pro Trp Gln Gln Asn Gly Ala Ala Val  
565 570 575

Arg Val Ser Leu Phe Gly Phe Asp Asn Gly Thr Glu Thr Leu Arg Thr  
580 585 590

Leu Asn Asp Gly His Val Gly Val Ile Asn Ala Asp Leu Asn Ala Gly  
595 600 605

Thr Asp Val Lys Gln Ala Gln Lys Leu Pro Glu Asn Ala Gly Val Ser  
610 615 620

Phe Ile Gly Thr Gln Lys Gly Gly Ala Phe Asp Ile Pro Gly Asp Leu  
Page 44

625                      630                      635                      640  
 Ala Arg Ser Trp Leu Ser Val Pro Asn Pro Asp Arg Val Ser Asn Ala  
                                  645                                   650                                   655  
 Asp Val Leu Lys Pro Trp Val Asn Gly Met Asp Leu Thr Arg Arg Pro  
                                  660                                   665                                   670  
 Ser Gly Arg Trp Ile Ile Asp Phe Ala Gln Met Asp Glu Gly Glu Ala  
                                  675                                   680                                   685  
 Arg Gln Tyr Leu Gln Pro Met Ala Tyr Val Glu Gln Lys Ile Arg Pro  
                                  690                                   695                                   700  
 Glu Arg Ala Thr Asn Ser Asp Arg Pro Ser Arg Glu Arg Trp Trp Leu  
                                  705                                   710                                   715                                   720  
 His Gln Arg Ser Arg Pro Glu Leu Arg Glu Ala Thr Ile Glu Leu Asp  
                                  725                                   730                                   735  
 Arg Phe Ile Gly Ile Pro Arg Val Ala Lys His Leu Leu Pro Val Trp  
                                  740                                   745                                   750  
 Leu Pro Glu Gly Thr Leu Pro Asp Ser Gln Val Val Val Ile Ala Arg  
                                  755                                   760                                   765  
 Asp Asp Asp Phe Ile Phe Gly Val Leu Ala Ser Thr Ile His Arg Ser  
                                  770                                   775                                   780  
 Trp Ala Arg Met Gln Gly Thr Tyr Met Gly Val Gly Asn Asp Leu Arg  
                                  785                                   790                                   795                                   800  
 Tyr Thr Pro Ser Thr Cys Phe Glu Thr Phe Pro Val Pro Ala Pro Thr  
                                  805                                   810                                   815  
 Asp Glu Gln Arg Ala Glu Ile Glu Lys Trp Ala Lys Tyr Ile Val Gln  
                                  820                                   825                                   830  
 Leu Arg Glu His Leu Leu Asn Gln Asp Ala Lys Gly Thr Leu Thr Gly  
                                  835                                   840                                   845  
 Ile Tyr Asn Gln Leu Glu Lys Leu Arg Asn Ser Pro Asp Ala Ala His  
                                  850                                   855                                   860  
 Pro Val Ser Ala Leu Ala Thr Ala His Asp Lys Leu Asp Gln Ala Val  
                                  865                                   870                                   875                                   880

NEB-207-US.ST25.txt

Ala Thr Ala Tyr Gly Trp Glu Trp Pro Leu Asn Glu Asp Gln Val Leu  
885 890 895

Glu Arg Leu Leu Ala Leu Asn Leu Glu Arg Cys Pro Ala  
900 905

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<222> (920)..(920)  
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Trp Arg Thr Leu Lys Gly Asp Glu Lys Gly Glu Ser Gln Val Phe Leu  
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Asp Arg Leu Phe Gln Ala Phe Gly His Ala Gly Tyr Lys Glu Ala Gly  
35 40 45

Ala Glu Leu Glu Tyr Arg Val Ala Lys Gln Gly Gly Gly Lys Lys Phe  
50 55 60

Ala Asp Leu Leu Trp Arg Pro Arg Val Leu Ile Glu Met Lys Lys Arg  
65 70 75 80

Gly Glu Lys Leu Ala Asn His Tyr Gln Gln Ala Phe Asp Tyr Trp Leu  
85 90 95

Lys Leu Val Pro Asp Arg Pro Arg Tyr Ala Val Leu Cys Asn Phe Asp  
100 105 110

Glu Leu Trp Val Tyr Asp Phe Asn Gln Gln Leu Asp Glu Pro Met Asp  
115 120 125

Arg Leu Arg Ile Glu Glu Leu Pro Glu Arg Tyr Thr Val Leu Asn Phe  
130 135 140

Met Phe Glu Gln Glu Arg Ala Pro Leu Phe Gly Asn Asn Arg Val Asp  
145 150 155 160

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Val Thr Arg Glu Ala Ala Asp Ser Val Ala Lys Val Leu Asn Ser Val  
 165 170 175  
 Ile Ala Arg Gly Glu Asp Arg Ala Arg Ala Gln Arg Phe Leu Leu Gln  
 180 185 190  
 Cys Val Met Ala Met Phe Ala Glu Asp Phe Glu Leu Ile Pro Arg Gly  
 195 200 205  
 Phe Phe Thr Glu Leu Ala Asp Asp Ala Arg Ala Gly Arg Gly Ser Ser  
 210 215 220  
 Phe Asp Leu Phe Gly Gly Leu Phe Arg Gln Met Asn Thr Ser Glu Arg  
 225 230 235 240  
 Ala Arg Gly Gly Arg Phe Ala Pro Ile Pro Tyr Phe Asn Gly Gly Leu  
 245 250 255  
 Phe Arg Ala Val Asp Pro Ile Glu Leu Asn Arg Asp Glu Leu Tyr Leu  
 260 265 270  
 Leu His Lys Ala Ala Leu Glu Asn Asn Trp Ala Arg Ile Gln Pro Gln  
 275 280 285  
 Ile Phe Gly Val Leu Phe Gln Ser Ser Met Asp Lys Lys Glu Gln His  
 290 295 300  
 Ala Lys Gly Ala His Tyr Thr Ser Glu Ala Asp Ile Met Arg Val Val  
 305 310 315 320  
 Leu Pro Thr Ile Val Thr Pro Phe Gln Arg Gln Ile Glu Ala Ala Thr  
 325 330 335  
 Thr Gln Lys Glu Leu Arg Ala Ile Leu Asp Glu Leu Ala Ser Phe Gln  
 340 345 350  
 Val Leu Asp Pro Ala Cys Gly Ser Gly Asn Phe Leu Tyr Val Ala Tyr  
 355 360 365  
 Arg Glu Leu Arg Arg Leu Glu Ala Arg Ala Leu Leu Arg Leu Arg Asp  
 370 375 380  
 Leu Ser Ala Pro Gly Thr Ala Leu Pro Pro Ala Arg Val Ser Ile Arg  
 385 390 395 400  
 Gln Met His Gly Leu Glu Tyr Asp Pro Phe Gly Val Glu Leu Ala Lys  
 405 410 415

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Val Thr Leu Thr Leu Ala Lys Glu Leu Ala Ile Arg Glu Met His Asp  
 420 425 430  
 Leu Leu Gly Asn Thr Gly Leu Asp Phe Asp Gln Pro Leu Pro Leu Asp  
 435 440 445  
 Asn Leu Asp Asp Arg Ile Val Gln Gly Asp Ala Leu Phe Thr Pro Trp  
 450 455 460  
 Pro Arg Val Asp Ala Ile Val Gly Asn Pro Pro Phe Gln Ser Lys Asn  
 465 470 475 480  
 Lys Leu Gln Arg Glu Met Gly Ala Ala Tyr Val Lys Lys Leu Arg Ala  
 485 490 495  
 His Tyr Pro Asp Val Pro Gly Arg Ala Asp Tyr Cys Val Tyr Trp Ile  
 500 505 510  
 Arg Lys Ala His Asp Gln Leu Gly Ser Gly Gln Arg Ala Gly Leu Val  
 515 520 525  
 Gly Thr Asn Thr Ile Arg Gln Asn Asp Ser Arg Val Gly Gly Leu Asp  
 530 535 540  
 Tyr Val Val Gln His Gly Gly Thr Ile Thr Asp Ala Val Gly Thr Gln  
 545 550 555 560  
 Val Trp Ser Gly Asp Ala Ala Val His Val Ser Ile Val Asn Trp Val  
 565 570 575  
 Lys Gly Pro Ala Glu Gly Pro Lys His Leu Ala Trp Gln Val Gly Asp  
 580 585 590  
 His Arg Thr Ser Pro Trp Gln Ser Thr Glu Leu Pro Val Ile Asn Ser  
 595 600 605  
 Ala Leu Ser Ala Gly Thr Asp Val Thr Gln Ala Gln Lys Leu Arg Val  
 610 615 620  
 Asn Met Asn Ser Gly Ala Cys Tyr Gln Gly Gln Thr His Gly His Lys  
 625 630 635 640  
 Gly Phe Leu Leu Asp Gly Leu Glu Ala Gly Gln Met Leu Ser Ala Glu  
 645 650 655  
 Arg Lys Asn Ala Glu Val Ile Phe Pro Tyr Leu Thr Gly Asp Glu Leu  
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660

665

670

Leu Arg Thr Ser Pro Pro His Pro Thr Arg Tyr Val Ile Asp Phe Gln  
 675 680 685  
 Pro Arg Asp Val Phe Gly Ala Arg Ala Tyr Lys Leu Pro Phe Ala Arg  
 690 695 700  
 Ile Glu Arg Glu Val Leu Pro Thr Arg Gln Ala Ala Ala Ala Glu Glu  
 705 710 715 720  
 Glu Ala Arg Asn Ala Glu Val Leu Ala Ala Asn Pro Lys Ala Lys Thr  
 725 730 735  
 Asn Lys His His Arg Asn Phe Leu Asn Gln Trp Trp Ala Leu Ser Tyr  
 740 745 750  
 Gly Arg Ser Glu Met Ile Glu Lys Ile Ser Ser Leu Ser Arg Tyr Ile  
 755 760 765  
 Val Cys Ser Arg Val Thr Lys Arg Gln Val Phe Glu Phe Leu Asp Asn  
 770 775 780  
 Gly Ile Arg Pro Ser Asp Gly Leu Gln Ile Phe Ala Phe Glu Asp Asp  
 785 790 795 800  
 Tyr Ser Phe Gly Val Ile Gln Ser Ser Val His Trp Gln Trp Leu Ile  
 805 810 815  
 Ala Arg Gly Gly Thr Leu Thr Ala Arg Leu Met Tyr Thr Ser Asp Thr  
 820 825 830  
 Val Phe Asp Thr Phe Pro Trp Pro Asp Pro Thr Leu Ala Gln Val Arg  
 835 840 845  
 Ala Val Ala Ala Ala Ala Val Lys Leu Arg Glu Leu Arg Asn Lys Val  
 850 855 860  
 Met Arg Glu Gln Gly Trp Ser Leu Arg Asp Leu Tyr Arg Thr Leu Asp  
 865 870 875 880  
 Met Pro Gly Lys Asn Pro Leu Arg Asp Ala Gln Glu Arg Leu Asp Ala  
 885 890 895  
 Ala Val Ser Ala Ala Tyr Gly Leu Pro Ala Gly Ala Asp Met Leu Asp  
 900 905 910

Phe Leu Leu Ala Leu Asn Ala Xaa Val Ala Ala Ala Glu Ala Arg Gly  
 915 920 925

Ala Ala Val Thr Gly Pro Gly Leu Pro Ala Gly Leu Asn Thr Ala Asp  
 930 935 940

Phe Val Thr Ala Asp Ala Val Arg Pro Leu Gly  
 945 950 955

<210> 15  
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 <212> PRT  
 <213> unknown

<220>  
 <223> first 14 amino terminal residues of MmeI  
 <400> 15

Ala Leu Ser Trp Asn Glu Ile Arg Arg Lys Ala Ile Glu Phe  
 1 5 10

<210> 16  
 <211> 29  
 <212> PRT  
 <213> unknown

<220>  
 <223> first 29 residues of the 25kD peptide

<220>  
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 <222> (20)..(20)  
 <223> X = Xaa (any amino acid)

<220>  
 <221> MISC\_FEATURE  
 <222> (21)..(21)  
 <223> X = Xaa (any amino acid)

<220>  
 <221> MISC\_FEATURE  
 <222> (23)..(23)  
 <223> X = Xaa (any amino acid)

<220>  
 <221> MISC\_FEATURE  
 <222> (25)..(25)  
 <223> X = Xaa (any amino acid)

<400> 16

Met Lys Ile Ser Asp Glu Phe Gly Asn Tyr Phe Ala Arg Ile Pro Leu  
 1 5 10 15

Lys Ser Thr Xaa Xaa Ile Xaa Glu Xaa Asn Ala Leu Gln  
 20 25

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<210> 17  
 <211> 40  
 <212> PRT  
 <213> unknown

<220>  
 <223> first 40 amino acid residues obtained from the 14 kD fragment

<220>  
 <221> MISC\_FEATURE  
 <222> (36)..(36)  
 <223> X=Xaa (any amino acid)

<400> 17

Met Asp Ala Lys Lys Arg Arg Asn Leu Gly Ala His Tyr Thr Ser Glu  
 1 5 10 15

Ala Asn Ile Leu Lys Leu Ile Lys Pro Leu Leu Leu Asp Glu Leu Trp  
 20 25 30

Val Val Phe Xaa Lys Val Lys Asn  
 35 40

<210> 18  
 <211> 25  
 <212> PRT  
 <213> unknown

<220>  
 <223> first 25 residues of the 7.5 kD peptide

<400> 18

Met Lys Ser Arg Gly Lys Asp Leu Asp Lys Ala Tyr Asp Gln Ala Leu  
 1 5 10 15

Asp Tyr Phe Ser Gly Ile Ala Glu Arg  
 20 25

<210> 19  
 <211> 8  
 <212> PRT  
 <213> unknown

<220>  
 <223> 25 kD fragment primer

<400> 19

Asp Glu Phe Gly Asn Tyr Phe Ala  
 1 5

<210> 20

<211> 20  
 <212> DNA  
 <213> unknown

<220>  
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 <222> (3)..(3)  
 <223> R = A or G

<220>  
 <221> misc\_feature  
 <222> (6)..(6)  
 <223> Y = T or C

<220>  
 <221> misc\_feature  
 <222> (9)..(9)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (12)..(12)  
 <223> Y = T or C

<220>  
 <221> misc\_feature  
 <222> (15)..(15)  
 <223> Y = T or C

<220>  
 <221> misc\_feature  
 <222> (18)..(18)  
 <223> Y = T or C

<400> 20  
 garttyggna aytayttygc

20

<210> 21  
 <211> 20  
 <212> DNA  
 <213> unknown

<220>  
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<220>  
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 <222> (3)..(3)  
 <223> R = A or G

<220>  
 <221> misc\_feature  
 <222> (6)..(6)  
 <223> R = A or G

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<222> (9)..(9)  
 <223> n is a, c, g, or t

<220>  
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 <222> (12)..(12)  
 <223> R = A or G

<220>  
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 <223> Y = T or C

<220>  
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 <222> (18)..(18)  
 <223> R = A or G

<400> 21  
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20

<210> 22  
 <211> 6  
 <212> PRT  
 <213> unknown

<220>  
 <223> 14 kD fragment primer

<400> 22

Met Asp Ala Lys Lys Arg  
 1 5

<210> 23  
 <211> 17  
 <212> DNA  
 <213> unknown

<220>  
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<220>  
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 <222> (6)..(6)  
 <223> Y = T or C

<220>  
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 <222> (9)..(9)  
 <223> n is a, c, g, or t

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 <222> (12)..(12)  
 <223> R = A or G

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<223> R = A or G

<400> 23  
atggaygcna araarcg

17

<210> 24  
<211> 17  
<212> DNA  
<213> unknown

<220>  
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<223> Y = T or C

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<222> (9)..(9)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> R = A or G

<220>  
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<222> (15)..(15)  
<223> R = A or G

<400> 24  
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17

<210> 25  
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<212> DNA  
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<223> n is a, c, g, or t

<220>  
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<223> Y = T or C

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<222> (9)..(9)  
<223> Y = T or C

<220>  
 <221> misc\_feature  
 <222> (12)..(12)  
 <223> n is a, c, g, or t

<220>  
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 <222> (15)..(15)  
 <223> R = A or G

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 cgncgyttyt tngcrtccat

20

<210> 26  
 <211> 7  
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 <213> unknown

<220>  
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<400> 26

Asp Lys Ala Tyr Asp Gln Ala  
 1 5

<210> 27  
 <211> 20  
 <212> DNA  
 <213> unknown

<220>  
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 <223> Y = T or C

<220>  
 <221> misc\_feature  
 <222> (6)..(6)  
 <223> R = A or G

<220>  
 <221> misc\_feature  
 <222> (9)..(9)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (11)..(11)  
 <223> Y = T or C

<220>  
 <221> misc\_feature  
 <222> (14)..(14)  
 <223> Y = T or C

<220>

<221> misc\_feature  
 <222> (17)..(17)  
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<400> 27  
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20

<210> 28  
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 <212> DNA  
 <213> unknown

<220>  
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 <223> Y = T or C

<220>  
 <221> misc\_feature  
 <222> (6)..(6)  
 <223> R = A or G

<220>  
 <221> misc\_feature  
 <222> (9)..(9)  
 <223> R = A or G

<220>  
 <221> misc\_feature  
 <222> (12)..(12)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (15)..(15)  
 <223> Y = T or C

<220>  
 <221> misc\_feature  
 <222> (18)..(18)  
 <223> R = A or G

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 gcytgrtcrt angcyttrtc

20

<210> 29  
 <211> 26  
 <212> DNA  
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<220>  
 <223> primer IP 1

<400> 29  
 gttggatccc gcacagattg ctcagg

26



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 <212> DNA  
 <213> unknown

<220>  
 <223> primer IP 2

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 gttggatcct acgttaatct gaataagatg

30

<210> 31  
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<400> 31  
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28

<210> 32  
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29

<210> 33  
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 <212> DNA  
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<220>  
 <223> primer IP 5

<400> 33  
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20

<210> 34  
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 <212> DNA  
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<220>  
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<400> 34  
 gtcaagccat aaacaccatc

20

<210> 35  
 <211> 20  
 <212> DNA

<213> unknown

<220>

<223> primer IP 7

<400> 35

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20

<210> 36

<211> 20

<212> DNA

<213> unknown

<220>

<223> primer IP 8

<400> 36

gtccaactaa ccctttatgg

20

<210> 37

<211> 20

<212> DNA

<213> unknown

<220>

<223> primer IP 9

<400> 37

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<210> 38

<211> 20

<212> DNA

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<223> primer IP 10

<400> 38

gttgcgttac ttgaaatgac

20

<210> 39

<211> 20

<212> DNA

<213> unknown

<220>

<223> primer IP 11

<400> 39

ccaaaatgga acttgtttcg

20

<210> 40

<211> 20

<212> DNA

<213> unknown

<220>

<223> primer IP 12

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gtgagtgcgc cctgaattag 20

<210> 41  
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<212> DNA  
<213> unknown

<220>  
<223> primer S1

<400> 41  
gcttcatttc atcctctgtg c 21

<210> 42  
<211> 21  
<212> DNA  
<213> unknown

<220>  
<223> primer S2

<400> 42  
taaccgcaa aattaatcgt g 21

<210> 43  
<211> 20  
<212> DNA  
<213> unknown

<220>  
<223> primer S3

<400> 43  
ccactattca ttacaacacc 20

<210> 44  
<211> 43  
<212> DNA  
<213> unknown

<220>  
<223> 20 nucleotides that matched the M. methyltrophus DNA sequence

<400> 44  
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<210> 45  
<211> 37  
<212> DNA  
<213> unknown

<220>  
<223> 22 nucleotides that matched the M. methyltrophus DNA sequence

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<210> 46  
 <211> 48  
 <212> DNA  
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<220>  
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<400> 46  
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<210> 47  
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 <212> DNA  
 <213> unknown

<220>  
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<400> 47  
 caaaagctga ggcgccgatc gctggccatc gcgtcggagt cttcaaac 48

<210> 48  
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 <212> DNA  
 <213> unknown

<220>  
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<400> 48  
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<210> 49  
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 <212> DNA  
 <213> unknown

<220>  
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<220>  
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<400> 49  
 caaaagctga ggcgccgatc gctggccatc gcgtcggagt cttcaaac 48

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<210> 50  
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<212> PRT  
<213> unknown

<220>  
<223> single internal CnBr digestion fragment

<400> 50

Gly Arg Gly Arg Gly Val Gly Val  
1 5